

Claims

I Claim:

1. A composition for removing solubilized organics from a water-like fluid phase consisting essentially of:
  - a hydrophilic  $\alpha$ -hydroxymonocarboxylic acid (AHA); and
  - an anionic polymer.
2. The composition of claim 1 where the AHA has a  $pK_a$  of greater than 3.8.
3. The composition of claim 1 where the AHA has the structure  $RR'C(OH)COOH$  where  
R and R' are independently selected from the group consisting of hydrogen and nonacidic hydrocarbonaceous groups,  
with the proviso that
$$n^H + 0.5(n^C) - 7(n^O) < 15(n^{OH})$$
where  
 $n^H$  = the total number of hydrogens on carbons,  
 $n^C$  = the total number of carbons,  
 $n^O$  = the total number of oxygens not attached to hydrogens, and  
 $n^{OH}$  = the total number of  $-OH$  groups in the molecule.
4. The composition of claim 1 where the anionic polymer is selected from the group consisting of poly(acrylic acid) and poly(methacrylic acid) and salts thereof, poly(acryloyl sulfonic acid) and poly(vinyl sulfonic acid) and salts thereof, and copolymers of the aforementioned polymers with acrylic amides and esters, and mixtures thereof.
5. The composition of claim 1 where the anionic polymer has a degree of polymerization of above 30.

6. The composition of claim 1 where the anionic polymer has a degree of polymerization between about 3000 and about 300,000.
7. The composition of claim 1 where the anionic polymer is selected from the group consisting of poly(acrylic acid) and poly(methacrylic acid) and salts thereof, poly(acryloyl sulfonic acid) and poly(vinyl sulfonic acid) and salts thereof, and copolymers of the aforementioned polymers with acrylic amides and esters, and mixtures thereof.
8. The composition of claim 1 where the weight ratio of AHA to anionic polymer in the composition ranges from about 1:1 to about 10,000 to 1.
9. The composition of claim 1 where the weight ratio of AHA to anionic polymer in the composition ranges from over 50:1 to about 10,000 to 1.
10. A composition for removing solubilized organics from a water-like fluid phase comprising:
  - a hydrophilic  $\alpha$ -hydroxymonocarboxylic acid (AHA) having a degree of polymerization of above 30; and
  - an anionic polymer,where the weight ratio of AHA to anionic polymer in the composition ranges from over 50:1 to about 10,000 to 1.
11. The composition of claim 10 where the AHA has a  $pK_a$  of greater than 3.8.
12. The composition of claim 10 where the AHA has the structure  $RR'C(OH)COOH$  where
  - R and R' are independently selected from the group consisting of hydrogen and nonacidic hydrocarbonaceous groups,
  - with the proviso that
$$n^H + 0.5(n^C) - 7(n^O) < 15(n^{OH})$$
where  $n^H$  = the total number of hydrogens on carbons,

$n^C$  = the total number of carbons,  
 $n^O$  = the total number of oxygens not attached to  
hydrogens, and  
 $n^{OH}$  = the total number of  $-OH$  groups in the molecule.

13. The composition of claim 10 where the anionic polymer is selected from the group consisting of poly(acrylic acid) and poly(methacrylic acid) and salts thereof, poly(acryloyl sulfonic acid) and poly(vinyl sulfonic acid) and salts thereof, and copolymers of the aforementioned polymers with acrylic amides and esters, and mixtures thereof.

14. The composition of claim 10 where the anionic polymer has a degree of polymerization between about 3000 and about 300,000.

15. A composition comprising:

a water-like fluid phase;  
at least one solubilized organic in the water-like fluid phase;  
an anionic polymer; and  
a hydrophilic  $\alpha$ -hydroxymonocarboxylic acid (AHA),

where the weight ratio of AHA to anionic polymer in the composition ranges from over 50:1 to about 10,000 to 1.

16. The composition of claim 15 where the AHA has a  $pK_a$  of greater than 3.8.

17. The composition of claim 15 where the AHA has the structure  
 $RR'C(OH)COOH$  where

R and R' are independently selected from the group consisting of hydrogen  
and nonacidic hydrocarbonaceous groups,  
with the proviso that

$$n^H + 0.5(n^C) - 7(n^O) < 15(n^{OH})$$

where  $n^H$  = the total number of hydrogens on carbons,

$n^C$  = the total number of carbons,

$n^O$  = the total number of oxygens not attached to hydrogens, and

$n^{OH}$  = the total number of  $-OH$  groups in the molecule.

18. The composition of claim 15 where the anionic polymer is selected from the group consisting of poly(acrylic acid) and poly(methacrylic acid) and salts thereof, poly(acryloyl sulfonic acid) and poly(vinyl sulfonic acid) and salts thereof, and copolymers of the aforementioned polymers with acrylic amides and esters, and mixtures thereof.